

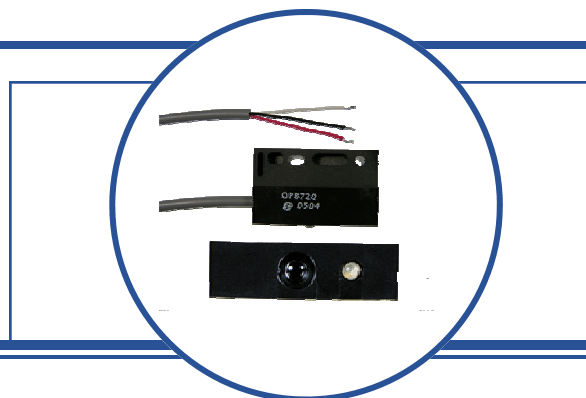
Long Distance Reflective Switch

OPB720A Series



Features:

- 0.04" to 36" (1 mm to 915 mm) with 90% reflective material.
(Typical Maximum detection distance to be set at factory)
- Recognizes objects as small as 0.08" (2 mm)
- Ambient light rejection < 100K Lux
- Open collector output
- Cable length 39" (990 mm) lead length 28 AWG wire



Description:

The **OPB720A** Series reflective switches detects objects as far away as 24" (610 mm) using standard 90% reflective material, and can detect objects as small as 0.08" (2 mm). The OPB720 series consist of three standard reflective switching distances **OPB720A-06Z** for typically 6" (152 mm), **OPB720A-12Z** for typically 12" (305 mm) and **OPB720A-36VZ** for typically 36" (915 mm).

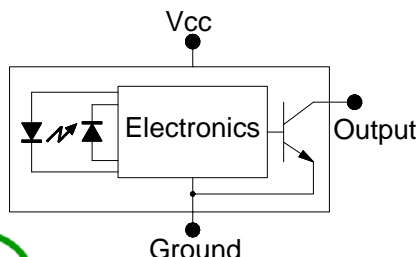
The **OPA720A** sensor is **NOT** affected by ambient light in most conditions. By using a synchronous driver detection scheme, ambient light is compensated for.

This sensor has a logical output that switches from a high level with no reflection target to a low level with a reflection target. With the addition of hysteresis, the **OPB720A** series minimizes switching oscillations on the output. The type of material used for the target is very dependent on the distance that can be achieved for the sensor. Taking this into consideration, the **OPB720A** series can be used in either a reflective or interruptive mode. As an example, the **OPB720A-12Z** can easily be used in a reflective mode for distances around 12" (305 mm) while when reflecting of a retro-reflective target similar to 3M 3870 or Nippon Crystallite at distances around 85" (216 mm) the device works well in the interruptive mode. See the included charts for typical distances with different reflective material for other versions of the **OPB720A** series devices.

The **OPB720A** series has an open collector output transistor and power requirements are compatible with most PLCs and TTL gates.

Applications:

- Conveyor belt package recognition
- Personnel movement recognition
- Near-focus security systems
- Hand wash and soap dispensing stations
- Toilet and urinal sensors
- Product dispensing systems



RoHS

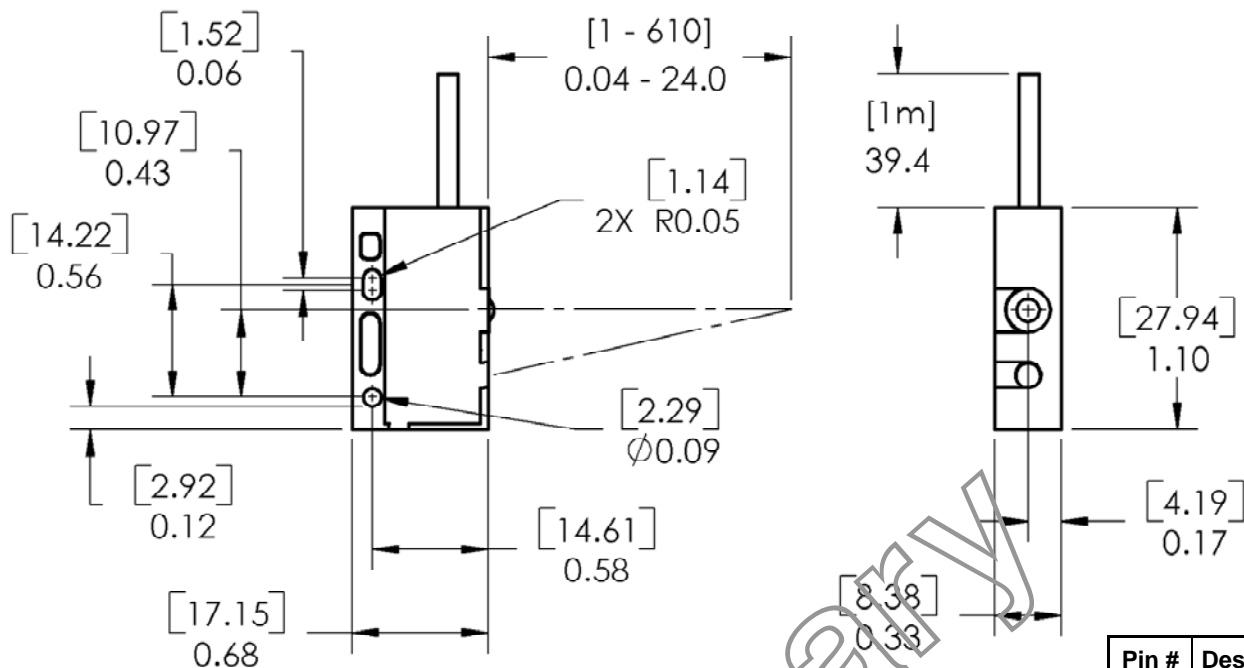
OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

Ordering Information

Part Number	Description
OPB720A-06Z	Maximum detection of 0.04" to 6" (1.0 mm to 152 mm) 39" (991 mm) lead length with 28 AWG wire, using white 90% reflective paper
OPB720A-12Z	Maximum detection of 0.04" to 12" (1.0 mm to 305 mm) 39" (991 mm) lead length with 28 AWG wire, using white 90% reflective paper
OPB720A-36VZ (Class 1M)	Maximum detection of 0.04" to 36" (1.0 mm to 915 mm) 39" (991 mm) lead length with 28 AWG wire, using white 90% reflective paper



Additional laser safety information can be found on the Optek website. See application #221. Classification is not marked on the device due to space limitations. See package outline for centerline of optical radiance. Operating devices beyond maximum rating may cause devices to exceed rated classification



DIMENSIONS ARE IN: [MILLIMETERS]
INCHES

Pin #	Description
Red	V _{CC}
White	Output
Black	Ground

Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

Operating Temperature Range	0° C to + 50° C
Storage Temperature Range	-40° C to + 80° C
Lead Soldering Temperature (1/16" (1.6 mm) from case for 5 seconds with soldering iron)	260° C ⁽¹⁾
Supply Voltage (V _{CC})	10 V to 30 V
Maximum Collector Voltage	30 V
Collector DC Current (Sink)	50 mA
Power Dissipation	300 mW

Electrical Characteristics (T_A = 25°C unless otherwise noted)

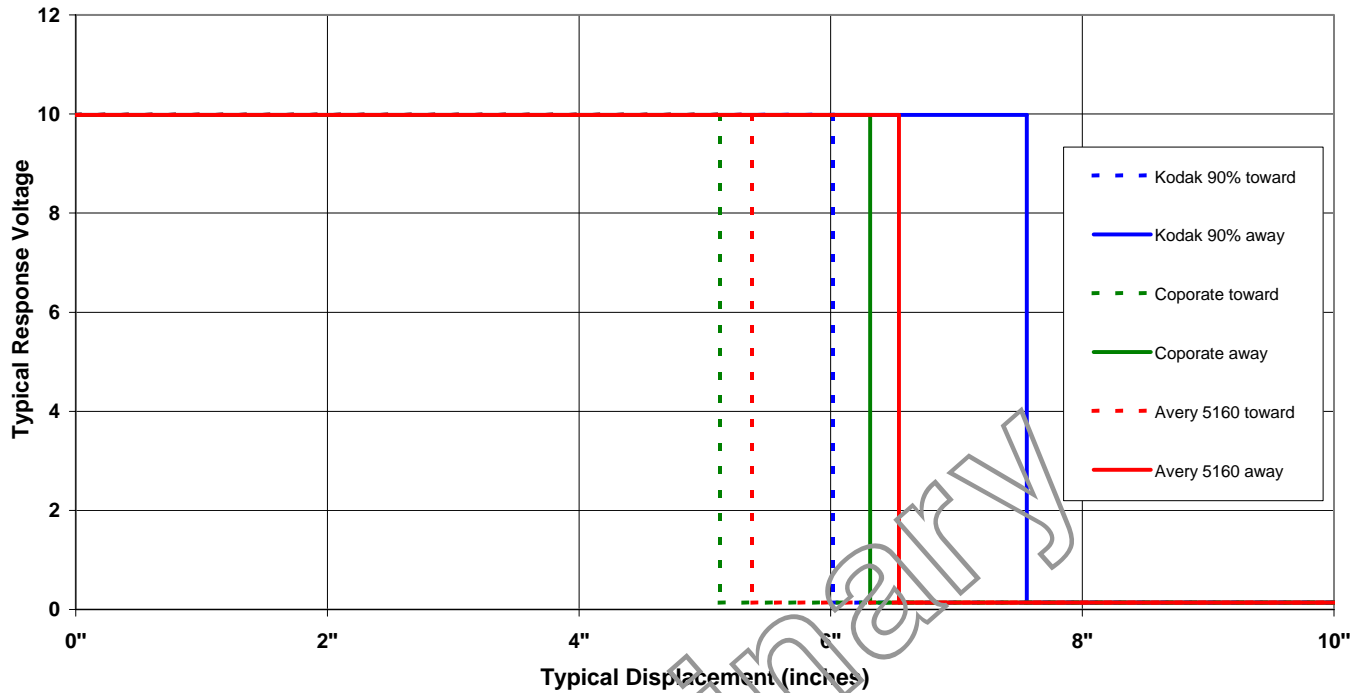
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
V _{OL}	Low Level Output Voltage	-	-	0.8	V	V _{CC} = 10 V, R _L = 10 K, D = See Note 2 & 3 (90% Reflective Surface Kodak—EK E152-7798)
V _{OH}	High Level Output Voltage	5	-	-	V	V _{CC} = 10 V, R _L = 10 K (No Target)

Notes:

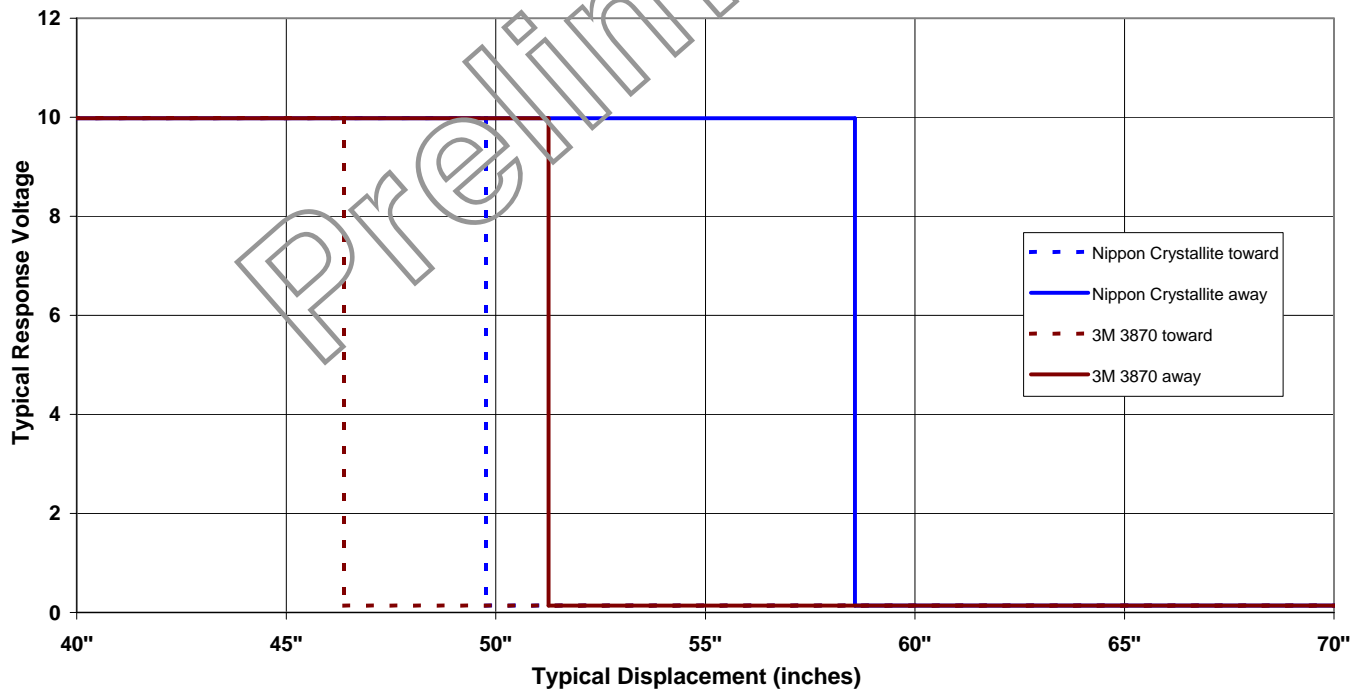
- (1) RMA flux is recommended. Duration can be extended to 10 seconds maximum when flow soldering.
- (2) Distance for OPB720A-06Z=6" (152 mm), Distance for OPB720A-12Z=12" (305mm), Distance for OPB720A-36VZ=36" (915 mm)
- (3) OPB720A-36VZ is a **class 1M** laser safety device. Do Not look at the device closer than 4" (100 mm) with a magnifying device.

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Voltage Response vs Displacement
OPB720A-06Z

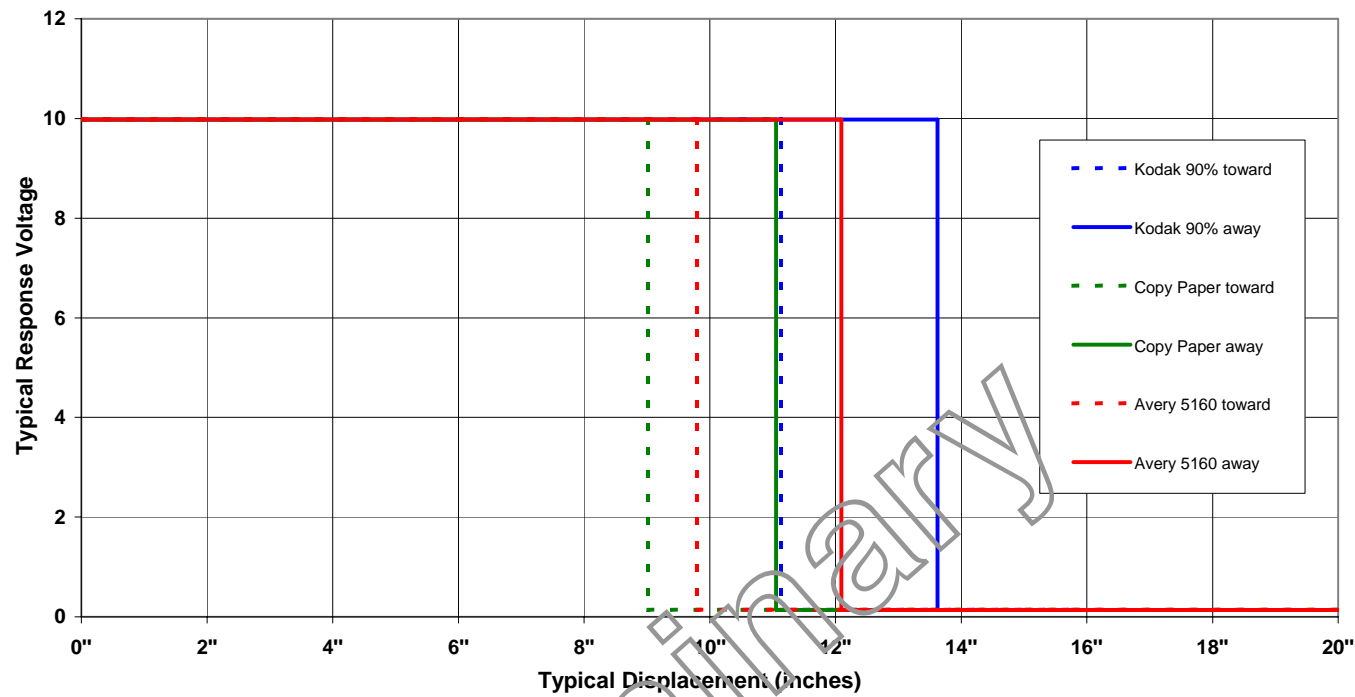


Voltage Response vs Displacement
OPB720A-06Z

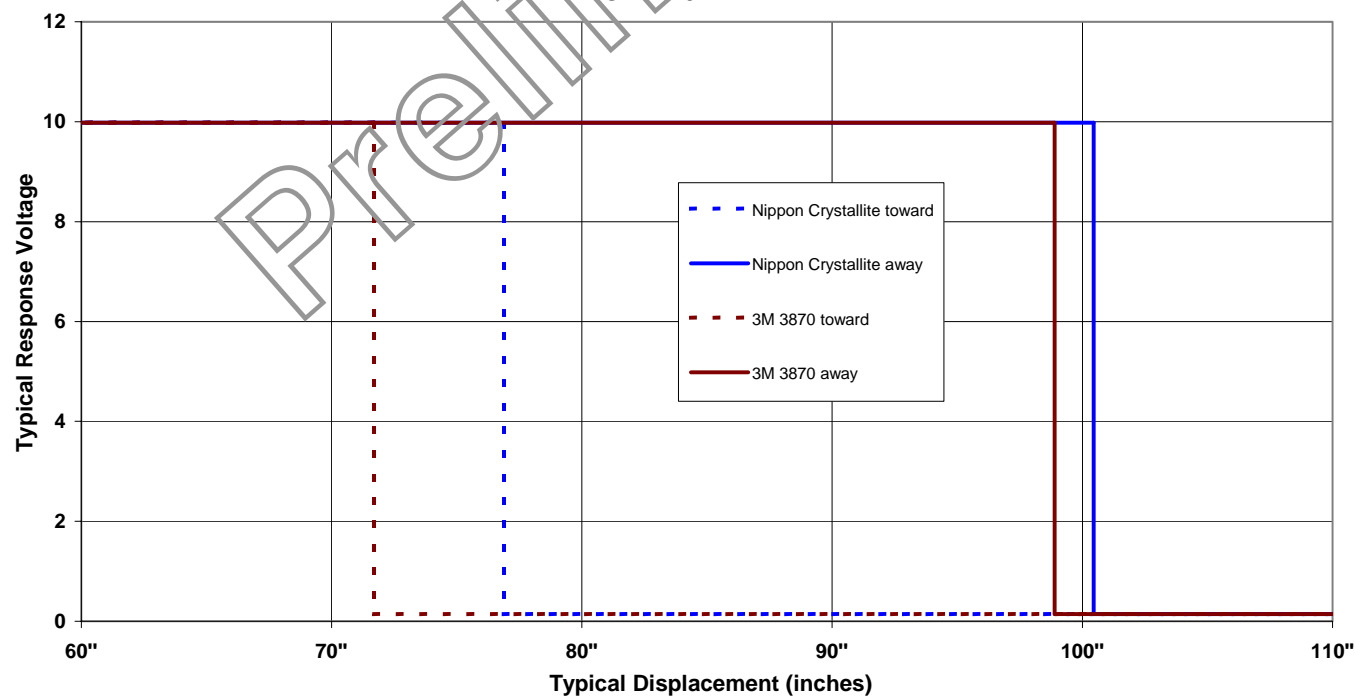


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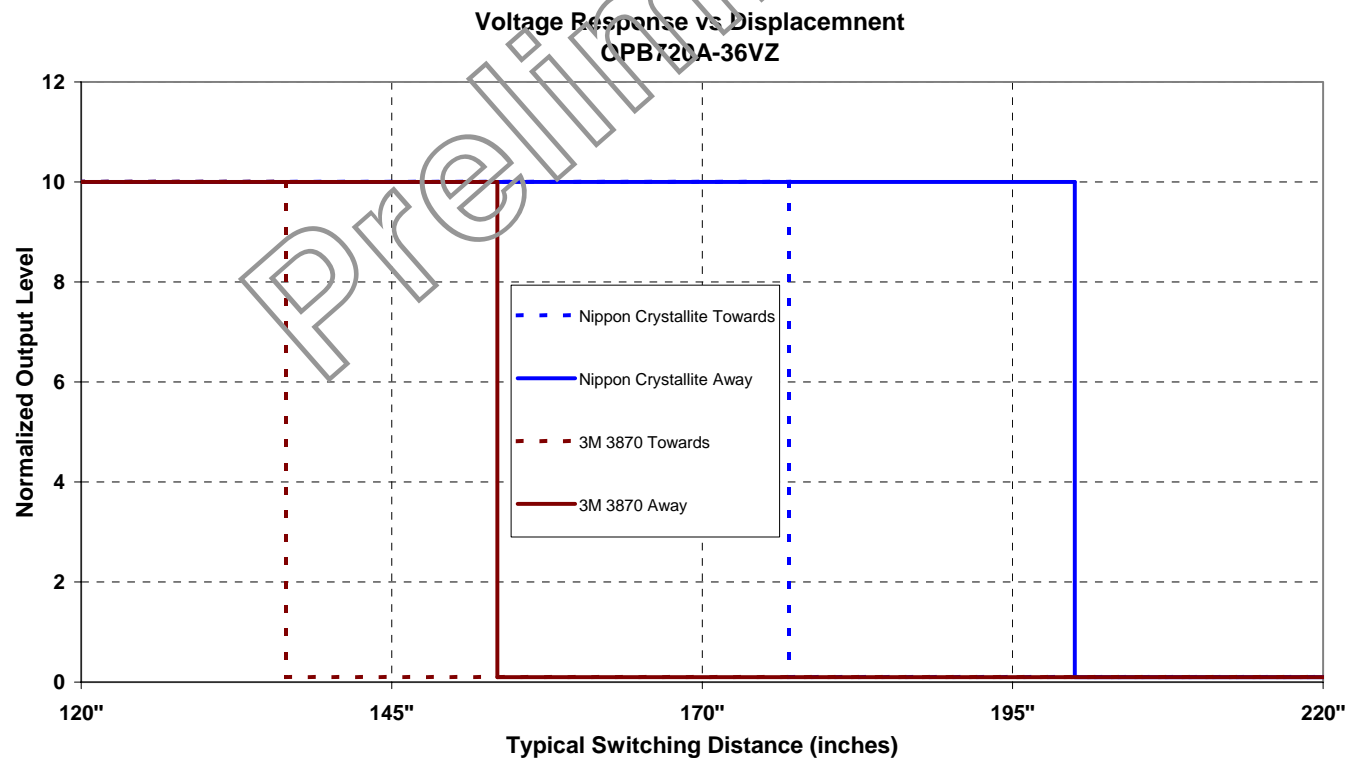
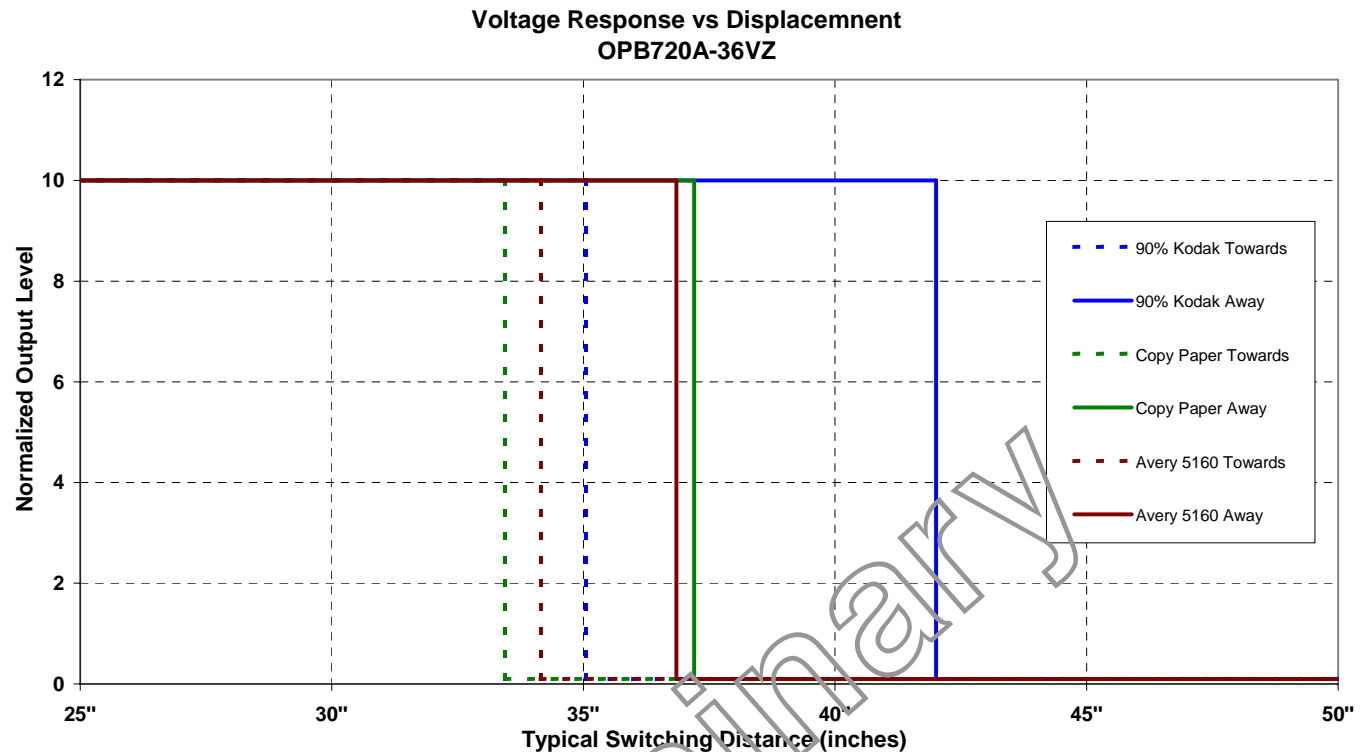
Voltage Response vs Displacement
OPB720A-12Z



Voltage Response vs Displacement
OPB720A-12Z



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